

THE UNIVERSITY OF TEXAS AT AUSTIN

Date: 9/7/2016

RECOMMENDATION FOR CHANGE IN ACADEMIC RANK/STATUS

Name: Saleh, Navid EID: salehnb Present Rank: Assistant Professor

Years of Academic Service (Include AY 2016-17 in each count):

At UT Austin since: 1/1/2014 (month/day/year) Total Years at UT Austin: 3.5In Present Rank since: 1/1/2014 (month/day/year) Total Years in Present Rank: 3.5

Tenure-track only:

Number of Years in Probationary Status: 3Additional information: AcceleratedPrimary Department: Civil, Architectural, and Environmental EngineeringCollege/School: Engineering, Cockrell School ofJoint Department: N/ACollege/School: N/AOther Department(s): N/ARecommendation actions¹:By Budget Council/Executive Committee: PromoteVote² for promotion 26; Against 0; Abstain 1; Absent 7; Ineligible to vote 3By Department Chair: PromoteBy College/School Advisory Committee: PromoteVote² for promotion 7; Against 0; Abstain 0; Absent 0; Ineligible to vote 0By Dean: PromoteAdministrative Action: Promote to Associate ProfessorDate Action Effective: September 1, 2017

(To be submitted to the Board of Regents as part of the annual budget.)

By: Mauri McIn Date: December 15, 2016
For the President¹See "Chart of Recommended Actions" for eligible recommended actions applicable to specific conditions and administrative levels.²Record all votes for and against promotion, abstentions by eligible voting members, and the number of absent eligible voting members. The number of committee members ineligible to vote should also be recorded. Enter zero where it would otherwise be blank.

Dean's Assessment

Navid B. Saleh

Department of Civil, Architectural, and Environmental Engineering
Cockrell School of Engineering

Dr. Navid Saleh received his BS in Civil Engineering from Bangladesh University of Engineering and Technology in 2001. He received his MS and PhD from Carnegie Mellon University in Civil and Environmental Engineering in 2004 and 2007, respectively. From June 2007 to December 2008 Navid Saleh was a postdoctoral associate at Yale University. Navid Saleh joined the faculty in the Department of Civil Engineering of the University of South Carolina (USC) in January 2009 and served there until December 2013. He subsequently joined the Department of Civil, Architectural, and Environmental Engineering at the University of Texas at Austin (UT) in January 2014.

If successfully promoted to associate professor in September 2017, he will have accumulated three years of probationary service at UT, and he will have served in rank as an assistant professor (at USC and UT) for a total of 7.5 years. While this case is considered to be an early promotion when considering only Dr. Saleh's time at UT, his total time in rank exceeds our normal timeline.

Eight external letters were submitted as part of the dossier, with four letter writers recommended by the candidate and four selected by the budget council. All letter writers are faculty members at universities in the US: Rice, Washington, Michigan, Virginia Tech, Yale, Stanford, Illinois, and UC Berkeley. Two letter writers are members of the National Academy of Engineering (NAE).

Teaching

Dr. Saleh's teaching has been in the area of environmental engineering. He has taught CE 341, *Introduction to Environmental Engineering*, a required undergraduate course for civil engineers three times with an average enrollment of 55; CE 377K, *Designing Sustainable Nanomaterials*, a technical elective for undergraduates once with an enrollment of 10; and CE 397, *Environmental Implications of Nanomaterials*, a graduate course twice with an average enrollment of 10.

Dr. Saleh's average instructor ratings at the undergraduate level have ranged between 4.1 and 4.8, with an average of 4.45. His average instructor rating is comparable to the average in the department for assistant professors teaching undergraduate courses (4.48) and considerably above the average in the Cockrell School (4.17). It is noted that Dr. Saleh's instructor ratings improved each time that he taught CE 341.

At the graduate level, his instructor ratings ranged from 3.9 to 4.7, with an average of 4.3. This is below the departmental average for assistant professors teaching graduate courses (4.43), but close to the Cockrell School average (4.34). Some concerns were expressed about the drop in instructor ratings during the second time that he taught CE 397. In the student comments, Dr. Saleh was asked to return solved homework and exams to the students in a timely manner and to slow the pace of his teaching.

Senior faculty conducted peer evaluations in his courses four times between 2014 and 2016. The comments from the peer reviewers were generally positive.

Research

Dr. Saleh's research addresses the beneficial uses of engineered nanomaterials and their possible consequences when released into the environment. Dr. Saleh's work, which is mostly experimental, has carefully addressed the aggregation and deposition of nanoparticles and nanotubes in water, mechanism of nano-bio interaction, nanotechnology based water treatment technology, and dispersion control in construction materials. Highlights of Dr. Saleh's published research include:

- 15 archival journal publications in rank at UT and 23 in rank at USC (career total of 50).
- 5 book chapters and one patent application at UT (one patent from USC)
- He frequently publishes in top-tier journals in his field, including *Environmental Science-Nano* (IF=5.90), *Water Research* (5.99), *Environmental Science and Technology* (5.39), *Journal of Hazardous Materials* (4.84), *Langmuir* (3.99), and *Nanotechnology* (3.57).
- An h-index of 23 (Google Scholar) with 4,213 citations. (Seven papers based on his PhD research at Carnegie Mellon correspond to more than 2,800 of the citations.)

While in rank at UT, Dr. Saleh secured nine grants from federal and state sources totaling \$2.6 million in research funding (his share is approximately \$0.8 million). Four grants are from the National Science Foundation (NSF), one is from the National Institutes of Health (NIH), and two are from the Environmental Protection Agency (EPA). He is the PI on six of these awards, and the PI for the subaward to UT on two.

At USC, he secured five grants from federal, state, and industrial sources totaling \$1.33 million (his share is \$0.67 million). Two grants are from NSF.

All the external letters strongly support Dr. Saleh's promotion and highlight the significance and creativity of his research.

Richard Luthy¹ (Stanford, NAE) states that Dr. Saleh "...continues to show a high rate of productivity and impact." He then points out that "Dr. Saleh is destined to make lasting contributions and shows excellent promise for the future." He notes the importance of Dr. Saleh's research by stressing that "... one example is his recent work on harnessing microwave radiation by absorption by metal oxide carbon nano-tube heterostructures to produce reactive oxygen species for disinfection. This is a highly original contribution with possibility for wide spread adoption in point-of-use treatment systems."

David Sedlak² (UC Berkeley, NAE) commented on Dr. Saleh's research on "...fundamental approach and experimental techniques to gain insight into the behavior of engineered nanomaterials" and noted that "... Saleh has contributed new insights into the role of aggregation and surface structure in experiments conducted in complex systems that contain nanomaterials." Dr. Sedlak concludes that "Saleh has established as strong reputation as one of the leading young researcher [sic] studying the aggregation and transport of environmental nanomaterials."

Benito Mariñas³ (Illinois) states that he is "... impressed with the quality of Dr. Saleh's research. It is particularly impressive that with his civil and environmental engineering background he has been able to contribute meaningfully on the important topic of environmental and public health impact of nanoparticles."

¹ Professor and former department chair, Department of Civil and Environmental Engineering

² Professor, Department of Civil and Environmental Engineering

³ Head, Department of Civil and Environmental Engineering

Pedro Alvarez⁴ (Rice) states, "Currently, Naved [sic] is broadly recognized as a leading expert on the environmental implications of carbon-based nanomaterials (e.g., single-walled carbon nanotubes) and nano-hybrids, including assessment of their fate, transport and potential toxicity."

Jaehong Kim⁵ (Yale) stresses that "... Naved is one of emerging stars who can be tenured at any research-intensive institutions."

Advising and Student Mentoring

Dr. Saleh has graduated two PhD students and two MS students (one co-supervised) at UT. Both of the PhD students started their graduate studies at USC, and moved to UT with Dr. Saleh. One of those students is now an assistant professor at SUNY Buffalo, and the other is a post-doc at Stanford. He has also supervised four undergraduate students.

At USC, Dr. Saleh graduated one PhD student and three MS students (one co-supervised). The PhD student is currently a post-doc at Rhode Island. He also supervised four undergraduate students.

Currently, Dr. Saleh is supervising four PhD students (one co-supervised) and three MS students (one co-supervised). In addition, he is very active with undergraduate student participation in laboratory work.

University Service

Dr. Saleh has served on several departmental committees, including the Strategic Vision Implementation Committee.

Professional Service

Dr. Saleh serves on the editorial board of *Environmental Science: Nano*, which is published by the Royal Society of Chemistry. He is an active member of the American Chemical Society (ACS). In 2016, he was the co-organizer and co-chair of three symposia: "Nanotechnology for Sustainable Agriculture and Food Systems," "Environmental Applications and Implications of Active Nanomaterials, Hierarchical Nanostructures, and Nanohybrids," and "Colloidal and Interfacial Phenomena in Environmental Systems."

Dr. Saleh has actively engaged in outreach to colleges and universities within the Navajo Nation, to develop means of providing safe water supplies.

Other Evidence of Merit or Recognition

In 2015, Dr. Saleh's research was recognized with one of two Emerging Investigator Awards from *Environmental Science: Nano* and the Sustainable Nanotechnology Organization. He serves on the editorial board of *Environmental Science: Nano* (IF=5.90). His students have also received awards for best paper and best poster at national conferences.

Overall Assessment

In summary, Dr. Saleh is a very good teacher and an excellent researcher whose contributions in the field of environmental effects of nanomaterials have been of the highest caliber. His publication and funding records are very strong. He has graduated two PhD students at UT and one at USC, and is currently supervising a large research group. He is very active and visible in the environmental nanomaterial community, and his work has been recognized with an international award. All

⁴ Professor and former department chair, Department of Civil and Environmental Engineering

⁵ Professor, Chemical and Environmental Engineering

evidence indicates that he has successfully made the transition from USC to UT, and that his productivity is accelerating.

Overall, I believe that Dr. Saleh meets or exceeds expectations for promotion to associate professor with tenure in all areas, and I support his case without reservation.

A handwritten signature in black ink, appearing to read "Sharon L. Wood". The signature is written in a cursive, flowing style.

Sharon L. Wood, Dean
19 October 2016

Statistical Summary for “Assistant Professor Rank”

Navid Saleh

Table 1. Statistics for “Assistant Professor Rank” at University of Texas (UT)

Metric	Value
Peer-reviewed journal publications (in rank <i>and total</i>)	15/50
Peer-reviewed conference proceedings (in rank at UT <i>and total</i>)	20/48
Number of <i>journal</i> papers <i>in rank</i> with UT students <i>as co-authors</i>	14
Total citations of all publications (career) <i>from ISI Web of Knowledge</i>	3044
h-index (career) <i>from ISI Web of Knowledge</i>	19
Total citations of all publications (career) <i>from Google Scholar</i>	4213
h-index (career) <i>from Google Scholar</i>	23
Total external research funding raised at UT	\$2,614,923
Total external research funding raised at UT (candidate’s share)	\$815,167
Total number of external grants/contracts <i>awarded at UT</i>	9
Number of external grants/contracts <i>awarded at UT</i> as PI	8
PhD students completed†	2 (2 sole advisor)
MS students completed†	1.5 (1 sole advisor)
PhD students in pipeline (as of 09/2016)	3.5 (3 sole advisor)
MS students in pipeline (as of 09/2016)	2.5 (2 sole advisor)
Number of courses taught	
Total # of students taught in organized courses	194
Average instructor evaluation for UG courses	4.45
Average instructor evaluation for Grad courses	4.30
Average course evaluation for UG courses	4.05
Average course evaluation for Grad courses	4.10
Teaching awards	
Student organizations advised	
Undergraduate <i>researchers</i> supervised	4
Service on journal editorial boards	1
Number of symposia organized	5

Table 2. Research Statistics for “Assistant Professor Rank” at University of South Carolina (USC)

Metric	Value
Peer-reviewed journal publications (in rank)	23
Peer-reviewed conference proceedings (in rank)	19
Number of <i>journal</i> papers <i>in rank</i> with USC students <i>as co-authors</i>	21
Total external research funding raised at USC	\$1,329,850
Total external research funding raised at USC (candidate’s share)	\$673,108
Total number of external grants/contracts <i>awarded</i>	5
Number of external grants/contracts <i>awarded</i> as PI	3
PhD students completed	1 (1 sole advisor)
MS students completed	2.5 (2 sole advisor)

Navid Saleh
Department of CAEE
Course Rating Averages

Tenure candidates must include all years in rank.

All other candidates must include, at minimum, the three most recent years.

What source was used to complete this chart? _ My CIS

(e.g., My CIS, summary provided by Provost's Office, etc.)

CE 341: Introduction to Environmental Engineering

Semester	Class Size	Number of Responses	Instructor Rating	Course Rating
Spring 14	63	49	4.1	3.8
Spring 15	61	44	4.3	3.9
Spring 16	41	34	4.8	4.4
Mean	55	42	4.4	4.0

CE 397: Environmental Implications of Nanomaterials

Semester	Class Size	Number of Responses	Instructor Rating	Course Rating
Fall 14	11	11	4.7	4.3
Fall 15	8	8	3.9	3.9
Mean	10	10	4.3	4.1

CE 377K: Designing Sustainable Nanomaterials

Semester	Class Size	Number of Responses	Instructor Rating	Course Rating
Fall 15	10	9	4.6	4.1
Mean	10	9	4.6	4.1

Candidate's Statement on Research

Navid Saleh

Table 1. Research Summary while in Rank at University of Texas (UT)

Metric	Value
Peer-Reviewed Journal Publications in Rank	15 of <50>
Peer Reviewed Conference Proceedings Publications in Rank	20 of <48>
Number of Papers with UT Students in Rank	14
Total Citations of all Publications (career) from <i>ISI Web of Knowledge</i>	3044
h-index (career) from <i>ISI Web of Knowledge</i>	19
Google Scholar Total Citations of all Publications (career)	4213
Google Scholar h-index (career)	23
Total External Research Funding <i>Raised</i> (total share at UT)	\$2,614,923
Total External Research Funding <i>Raised</i> (candidate share at UT)	\$815,167
Total Number of External Grants/Contracts Received at UT	9
Number of External Grants/Contracts Received as PI	8 of <9>

Table 2. External Grants and Contracts Awarded while in Rank at University of Texas (UT)

Co-Investigators†	Title	Agency	Project Total	Candidate's Share	Grant Period
PI: Navid Saleh Co-PIs: Saleh only PI at UT. Peter Vikesland at Virginia Tech and Catherine Murphy at University of Illinois. Vikesland overall PI of the project.	Collaborative Research: Fate, Transport, and Organismal Uptake of Rod-Shaped Nanomaterials	National Science Foundation (NSF)	\$119,016 (UT Share)	\$119,016	01/01/14-09/30/16
PI: Navid Saleh Co-PIs: Saleh only PI at UT. Tara Sabo-Attwood and John Lednický at University of Florida and P Lee Ferguson at Duke University. Sabo-Attwood overall PI of the project.	Contribution of Toll-Like Receptors in the Pulmonary Response to Nanoparticles and Pathogens	National Institute of Health (NIH)	\$173,016 (UT Share)	\$173,016	05/01/14-04/30/17
PI: Navid Saleh Co-PIs: Mary Jo Kirisits, Brian Korgel, and Hillary Hart.	NUE: Sustainable Nanotechnology Education for Undergraduate Engineering Students	National Science Foundation (NSF)	\$199,997	\$120,000	10/01/14-09/30/17
PI: Desmond Lawler Co-PIs: Lynn Katz, Mary Jo Kirisits, Gerald Speitel, Kerry Kinney, and Navid Saleh.	Water Innovation Network for Sustainable Small Systems (WINSSS)	Environmental Protection Agency (EPA)	\$1,456,225 (UT Share)	\$100,000	09/01/14-08/31/17
PI: Navid Saleh Co-PIs: Amit Bhasin at UT and Enad Mahmoud at UT Pan American.	Effectively Dispersed Carbon Nanotube Enhanced Asphalt: Novel Foamed Delivery and Traditional Mixing Techniques	Texas Department of Transportation (TxDOT)	\$265,438	\$110,000	01/01/15-12/31/16
PI: Navid Saleh Co-PIs: Mary Jo Kirisits, Delia Milliron, and Lynn Katz.	UNS: Role of dopant concentration and distribution in the environmental behavior of indium tin oxide nanoparticles	National Science Foundation (NSF)	\$299,917	\$100,000	06/01/15-05/30/17
PI: Navid Saleh Co-PI: Mary Jo Kirisits.	Development of nanomaterial use, transport, and disposal guidelines for laboratories at UT Austin and other THWRC Consortium Universities	Texas Hazardous Waste Research Center (THWRC)	\$6,000	\$3,000	09/01/15-07/15/17
PI: Navid Saleh Co-PIs: Saleh only PI at UT. Tara Sabo-Attwood at University of Florida. Saleh overall PI of the project.	Collaborative Research: EAGER: Interaction of Carbon-Metal Nanohybrids at Environmental Interfaces	National Science Foundation (NSF)	\$80,135 (UT Share)	\$80,135	05/20/16-04/30/17

PI: Navid Saleh Co-PI: Desmond Lawler.	A Nano-Silver and Zeolite Solution: Ceramic Water Filters for Disinfection and Hardness Removal	Environmental Protection Agency (EPA)	\$14,999	\$10,000	08/15/16- 08/14/17
TOTAL			\$2,614,923	\$815,167	

Table 3. Research Summary while in Rank at University of South Carolina (USC)

Metric	Value
Peer-Reviewed Journal Publications in Rank	23 of <50>
Peer Reviewed Conference Proceedings Publications in Rank	19 of <49>
Number of Papers with USC Students in Rank	21
Total External Research Funding <i>Raised</i> (total share at USC)	\$1,329,850
Total External Research Funding <i>Raised</i> (candidate share at USC)	\$673,108
Total Number of External Grants/Contracts Received	5
Number of External Grants/Contracts Received as PI	3 of <5>

Table 4. External Grants and Contracts Awarded while in Rank at University of South Carolina (USC)

Co-Investigators†	Title	Agency	Project Total	Candidate's Share	Grant Period
PI: Navid Saleh Co-PIs: Tara Sabo-Attwood and P. Lee Ferguson. Both Sabo-Attwood and Ferguson were at USC at that time.	Influence of diameter and chirality of single-walled carbon nanotubes on their fate and effects in the aquatic environment	National Science Foundation (NSF)	\$436,013	\$160,108	10/01/09- 09/30/13
PI: Navid Saleh Co-PIs: Juan Caicedo and Ann Johnson at USC.	NUE: Nano in a Global Context for Engineering Students	National Science Foundation (NSF)	\$200,000	\$180,000	10/01/10- 09/30/14
PI: Yeomin Yoon at USC Co-PIs: Navid Saleh and Joseph R. V. Flora at USC.	Applications of Carbon Nanotubes in UF and MF Membranes: Pretreatment in Seawater Desalination	Gold Star Engineering and Construction Co., South Korea	\$220,000	\$73,000	05/01/10- 04/30/13
PI: Navid Saleh	Mechanistic Understanding of Nanomaterial Toxicity: Aggregation and Surface Interaction in Biologically Relevant Conditions	US Air Force Laboratory	\$60,000	\$60,000	10/15/11- 04/30/13
PI: Jonathan Goodall at USC Co-PIs: Navid Saleh and Michael Meadows at USC.	A GIS-based Mitigation Forecasting Tool and Study on Advanced Mitigation Processes used by DOTs	South Carolina Department of Transportation (SCDOT)	\$413,837	\$200,000	01/01/13- 12/31/15
TOTAL			\$1,329,850	\$673,108	

Total career external research funding raised \$3,944,773; candidate's share is \$1,488,275.

External Funding and Division of Labor

Navid Saleh

This document lists all externally funded grants and contracts that I have received while in rank at University of Texas (Table 1) and at University of South Carolina (Table 2). An italicized row corresponds a project where I was not the PI. Additional detail on each grant or contract can be found in my CV.

Table 1. Division of Labor for External Grants and Contracts Awarded while in Rank at UT

Title	Agency	Project Total	Candidate's Share	Percentage
Collaborative Research: Fate, Transport, and Organismal Uptake of Rod-Shaped Nanomaterials	National Science Foundation (NSF)	\$119,016 (UT Share)	\$119,016	100%
Contribution of Toll-Like Receptors in the Pulmonary Response to Nanoparticles and Pathogens	National Institute of Health (NIH)	\$173,016 (UT Share)	\$173,016	100%
NUE: Sustainable Nanotechnology Education for Undergraduate Engineering Students	National Science Foundation (NSF)	\$199,997	\$120,000	60%
<i>Water Innovation Network for Sustainable Small Systems (WINSSS)</i>	<i>Environmental Protection Agency (EPA)</i>	<i>\$1,456,225 (UT Share)</i>	<i>\$100,000</i>	<i>7%</i>
Effectively Dispersed Carbon Nanotube Enhanced Asphalt: Novel Foamed Delivery and Traditional Mixing Techniques	Texas Department of Transportation (TxDOT)	\$265,438	\$110,000	42%
UNS: Role of dopant concentration and distribution in the environmental behavior of indium tin oxide nanoparticles	National Science Foundation (NSF)	\$299,917	\$100,000	33%
Development of nanomaterial use, transport, and disposal guidelines for laboratories at UT Austin and other THWRC Consortium Universities	Texas Hazardous Waste Research Center (THWRC)	\$6,000	\$3,000	50%
Collaborative Research: EAGER: Interaction of Carbon-Metal Nanohybrids at Environmental Interfaces	National Science Foundation (NSF)	\$80,135 (UT Share)	\$80,135	100%
A Nano-Silver and Zeolite Solution: Ceramic Water Filters for Disinfection and Hardness Removal	Environmental Protection Agency (EPA)	\$14,999	\$10,000	66%
TOTAL		\$2,614,923	\$815,167	

Table 2. Division of Labor for External Grants and Contracts Awarded while in Rank at USC

Title	Agency	Project Total	Candidate's Share	Percentage
Influence of diameter and chirality of single-walled carbon nanotubes on their fate and effects in the aquatic environment	National Science Foundation (NSF)	\$436,013	\$160,108	37%
NUE: Nano in a Global Context for Engineering Students	National Science Foundation (NSF)	\$200,000	\$180,000	90%
Applications of Carbon Nanotubes in UF and MF Membranes: Pretreatment in Seawater Desalination	Gold Star Engineering and Construction Co., South Korea	\$220,000	\$73,000	33%
Mechanistic Understanding of Nanomaterial Toxicity: Aggregation and Surface Interaction in Biologically Relevant Conditions	US Air Force Laboratory	\$60,000	\$60,000	100%
A GIS-based Mitigation Forecasting Tool and Study on Advanced Mitigation Processes used by DOTs	South Carolina Department of Transportation (SCDOT)	\$413,837	\$200,000	48%
TOTAL		\$1,329,850	\$673,108	

Total career external research funding raised \$3,944,773; candidate's share is \$1,488,275.